CLAIMS

1. A method for producing an elastic nonwoven fabric, comprising:

incrementally stretching a nonwoven web in at least one direction to activate the elastic properties of the nonwoven web and to form the elastic nonwoven fabric,

wherein the nonwoven web comprises a plurality of multicomponent strands having first and second polymer components longitudinally coextensive along the length of the strands, said first component comprising an elastomeric polymer, and said second polymer component comprising a polymer less elastic than the first polymer component.

2. The method according to claim 1, wherein the nonwoven web is formed by:

melt spinning a plurality of multicomponent strands having first and second polymer components longitudinally coextensive along the length of the strands, said first component comprising an elastomeric polymer, and said second polymer component comprising a non-elastomeric polymer;

forming the multicomponent strands into a nonwoven web; and

bonding or intertwining the strands to form a coherent bonded nonwoven web.

3. The method according to claim 1, wherein the step of incrementally stretching the web comprises stretching the fabric so that portions of the multicomponent strands are stretch-activated and become elastic, while other portions of the strands are not stretch-activated and are substantially less elastic.

4. The method according to claim 1, wherein the incrementally stretching the web comprises stretching the fabric so that substantially all of the multicomponent strands are stretch-activated and become elastic.

5. The method according to claim 1, wherein the incrementally stretching the web comprises incrementally stretching the web in both the machine direction and in the cross-machine direction.

6. The method according to claim 1, wherein the incrementally stretching the web comprises directing the web through at least one pair of interdigitating stretching rollers.

7. The method according to claim 5, wherein the directing the web through interdigitating stretching rollers includes forming narrow, spaced apart longitudinally extending stretch-activated elastic zones in the fabric, separated by intervening longitudinally extending non-activated zones that are substantially less elastic.

8. The method according to claim 1, wherein the incrementally stretching the web comprises directing the web through a first pair of interdigitating stretching rollers to stretch activate at a first portion of the web and subsequently directing the web through a second pair of interdigitating stretching rollers to stretch activate a second portion of the non-activated strands within the web.

9. The method according to claim 1, wherein the incrementally stretching the web further comprises impinging fluid onto the surface of the web.

10. The method according to claim 9, wherein the fluid is either water or air.

11. The method according to claim 1, wherein the first polymer component comprises an elastomeric polyurethane, elastomeric polyethylene, elastomeric polypropylene, styrene block copolymers or blends thereof, and the second polymer component comprises a polyolefin that is less elastic than the first component.

12. The method according to claim 10 wherein the second polymer component is polypropylene, polyethylene, or a blend thereof.

13. The method according to claim 2, wherein the melt spinning comprises arranging the first and second polymer components in the strand cross-section to

form a sheath/core configuration, and wherein the step of incrementally stretching includes forming corrugations in both the sheath and the core of the strands.

14. The method according to claim 2, wherein the melt spinning comprises arranging the first and second polymer components in the strand cross-section to form the polymer components in a segmented pie configuration, and wherein the step of incrementally stretching includes either splitting the first and second polymer components apart from one another or forming serpentines or other non-linear, random textures of the less elastic components down the length of the strand.

15. The method according to claim 2, wherein the melt spinning comprises arranging the first and second polymer components in the strand cross-section to form polymer components in a tipped multilobal configuration, and wherein the step of incrementally stretching includes either splitting the first and second polymer components apart from one another or forming crimps down the length of the strand.

16. The method according to claim 1, wherein at least a portion of the multicomponent strands has a sheath/core configuration.

17. The method according to claim 1, wherein least a portion of the multicomponent strands has a trilobal or tipped trilobal configuration.

18. An elastic nonwoven fabric comprising:

a plurality of multicomponent strands randomly arranged to form a nonwoven web;

a multiplicity of bond sites or substantially randomly intertwined strands bonding the strands together to form a coherent bonded nonwoven web;

the strands of the web including first and second polymer components, the first polymer component comprising an elastomeric polymer, and the second polymer component comprising a non-elastomeric polymer; and

wherein first portions of the multicomponent strands of the web are stretch-activated and elastic.

19. The fabric according to claim 18, wherein other portions of the multicomponent strands of the web are not stretch-activated and less elastic than the first portions.

20. The fabric according to claim 19, including narrow, spaced apart longitudinally extending stretch-activated elastic zones in the fabric, separated by intervening longitudinally extending non-activated, substantially less elastic zones.

21. The fabric according to claim 20, wherein the first polymer component comprises an elastomeric polyurethane, ,elastomeric polyethylene, elastomeric polypropylene, styrene block copolymers or blends thereof and the second polymer component comprises a polyolefin.

22. The fabric according to claim 18 wherein the second polymer component is polypropylene, polyethylene, or blend thereof.

23. The fabric according to claim 18, wherein the first and second polymer components are arranged in a sheath core configuration, and the stretch-activated portions of the stands have corrugations in the sheath and in the core of the strands.

24. The fabric according to claim 18, wherein the first and second polymer components are arranged in a segmented pie configuration, and the stretch-activated portions of the strands have either the first and second polymer components split apart from one another or the components both exhibit crimps down their length.

25. The fabric according to claim 18, wherein the first and second polymer components are arranged in a tipped multilobal configuration, and the stretch-activated portions of the strands have either the first and second polymer components split apart from one another or the components both exhibit crimps down their length.

26. A multicomponent fiber comprising an elastomeric component and a component have less elasticity than the elastomeric component, said multicomponent

fiber exhibiting an overall helical configuration which includes the components having less elasticity bulked around the elastomeric component.

27. The fiber according to claim 26, wherein the fiber has been subjected to incremental stretching.

28. A garment comprising a plurality of layers, wherein at least one of said layers comprises the nonwoven fabric of claim 16.

29. The garment according to claim 28 wherein the garment is a training pant, a diaper, an absorbent underpant, an incontinence product, a feminine hygiene item, an industrial apparel, a coverall, a head covering, a pant, a shirt, a glove, a sock, a surgical gown, a surgical drape, a face mask, a surgical cap, a surgical hood, a shoe covering, or a boot slipper.

30. A method to produce a multicomponent fiber according to claim 26 using a multilobed spinneret design wherein at least one of the slots which defines the lobes, and preferably all of the lobes, is cut at an angle different than 90 degrees to the face of the die block.